

No.

8700092



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Nickerson American Plant Breeders, Inc.**

Whereas, THERE HAS BEEN PRESENTED TO THE  
**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS BY THE OWNER OF THE RIGHTS. (34 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

DURUM WHEAT

'Fjord'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D. C. this 31st day of October in the year of our Lord one thousand nine hundred and eighty-eight.

Attest:

*Kenneth D. Evans*  
Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Richard E. Lyng*  
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2425).

1. NAME OF APPLICANT(S) Nickerson American Plant Breeders Inc.		2. TEMPORARY DESIGNATION HD81-485		3. VARIETY NAME Fjord	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 5201 Johnson Drive Mission, Kansas 66205		5. PHONE (Include area code) 913-384-4940 KS 303-532-3721 CO		FOR OFFICIAL USE ONLY PVPO NUMBER 8700092	
6. GENUS AND SPECIES NAME Triticum durum		7. FAMILY NAME (Botanical) Gramineae		FILING DATE March 23, 1987 TIME 10:55 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
8. KIND NAME Spring Durum Wheat		9. DATE OF DETERMINATION 1=1981 2=1984		AMOUNT FOR FILING \$1800.00 DATE March 23, 1987 AMOUNT FOR CERTIFICATE \$200.00 DATE Sept. 7, 1988	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				12. DATE OF INCORPORATION	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware					
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS					
R.E. Heiner 5201 Johnson Drive Mission, KS 66205 (913)384-4940		or R.F. Bruns C. Bruns 806 N. Second St. PHONE (Include area code):		Berthoud, CO 80513 (303)532-3721	
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED					
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)					
b. <input checked="" type="checkbox"/> Exhibit B. Novelty Statement.					
c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety (Request form from Plant Variety Protection Office.)					
d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of Variety.					
e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of Applicant's Ownership.					
f. <input checked="" type="checkbox"/> Exhibit F. Quality and Agronomic Data					
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act. <input checked="" type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input type="checkbox"/> No					
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> Foundation <input checked="" type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified		
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input type="checkbox"/> Yes (If "Yes," give date) <input checked="" type="checkbox"/> No					
19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No					
20. The applicant(s) declares, that a viable sample or basic seeds of this variety will be furnished with the application and will be re-purchased upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believes, that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					

SIGNATURE OF APPLICANT

DATE

SIGNATURE OF APPLICANT

DATE

## EXHIBIT A

## ORIGIN AND BREEDING HISTORY OF FJORD

Fjord originated from the cross 'Edmore/Ward' which was made at Berthoud, Colorado in 1978. F2 selections from this cross were advanced in the greenhouse through the F4 generation by single seed descent. The original bulk was from a single F5 head-row selection made at an AgriPro breeding nursery in Hunter, North Dakota in 1980. This bulk was entered into yield trials in 1981 under the experimental number HD81-485. This line has been yield tested in AgriPro nurseries in the Red River Valley from 1981 through 1986. It has been tested in the Uniform Regional Durum Nursery from 1984 to 1986.

There were 100 head-rows grown in Berthoud, CO in 1983 and 90 were selected to produce breeder seed. Approximately 1629 pounds of breeder seed was produced in Berthoud, CO in 1984.

Fjord is uniform and stable. Less than .5% of the plants were rogued from the foundation fields in 1986. Approximately 95% of the rogued variant plants were 3 to 12 centimeters taller than Fjord. Less than .5% of these total variant plants may be encountered in subsequent generations.

EXHIBIT B  
NOVELTY STATEMENT

Fjord is most similar to the spring durum wheat Vic. However, it can be distinguished by the following morphological characteristics:

-Fjord and Vic both have elliptical seed shapes. However, Fjord's are significantly shorter in length, (see statistical data following page).

-Fjord's seed crease is narrow. Vic's seed crease is classified as being midwide, (Crop Science; Volume #20, Nov./Dec. 1980).

8700092

ANOVA TABLE FOR SEED LENGTH  
FJORD VS. VIC

<u>SOURCE</u>	<u>DF</u>	<u>SS</u>	<u>MS</u>
TOTAL	197	84.135	
VAR	1	53.377	53.37715
ERROR	196	30.758	0.15693

F-TEST= 340.133\*\*

CV= 0.709

LSD(5%)= 0.011

MEANS FOR EACH VARIETY

FJORD = 6.92mm

VIC = 7.96mm

\*\*The difference in means of seed length are significantly different at the 1% probability level.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK, MEAT, GRAIN & SEED DIVISION  
BELTSVILLE, MARYLAND 20705

EXHIBIT C  
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY  
WHEAT (TRITICUM SPP.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S) Nickerson American Plant Breeders Inc.		FOR OFFICIAL USE ONLY
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) 5201 Johnson Drive Mission, Kansas 66205		PVPO NUMBER 8700092
		VARIETY NAME OR TEMPORARY DESIGNATION

Place the appropriate number that describes the varietal character of this variety in the boxes below.  
Place a zero in first box (e.g., 0 8 9 or 0 9 ) when number is either 99 or less or 9 or less.

## 1. KIND:

2 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

## 2. TYPE:

1 1 = SPRING 2 = WINTER 3 = OTHER (Specify) 2 1 = SOFT 3 = OTHER (Specify)  
2 = HARD

3 1 = WHITE 2 = RED 3 = OTHER (Specify) Amber

3. SEASON - NUMBER OF DAYS FROM ~~planting~~ TO:

0 6 0 FIRST FLOWERING 0 6 5 LAST FLOWERING

## 4. MATURITY (50% Flowering):

0 1 NO. OF DAYS EARLIER THAN 7 1 = ARTHUR 2 = SCOUT 3 = CHRIS  
-- -- NO. OF DAYS LATER THAN -- -- 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7 = Vic

## 5. PLANT HEIGHT (From soil level to top of head):

0 8 8 CM. HIGH  
-- -- CM. TALLER THAN -- --  
0 2 CM. SHORTER THAN 7 1 = ARTHUR 2 = SCOUT 3 = CHRIS  
4 = LEMHI 5 = NUGAINES 6 = LEEDS 7 = Vic

## 6. PLANT COLOR AT BOOTING (See reverse):

3 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

## 7. ANTHUR COLOR:

1 1 = YELLOW 2 = PURPLE

## 8. STEM:

\*\*Snakey Necks

1 Anthracnose: 1 = ABSENT 2 = PRESENT

2 Waxy bloom: 1 = ABSENT 2 = PRESENT

2 Hairiness of first internode or rachis: 1 = ABSENT 2 = PRESENT

1 Internodes: 1 = HOLLOW 2 = SOLID

0 5 NO. OF NODES (Originating from node above ground)

2 0 CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

## 9. AURICLES:

2 Anthracnose: 1 = ABSENT 2 = PRESENT

1 Hairiness: 1 = ABSENT 2 = PRESENT

## 10. LEAF:

2 Flag leaf at booting stage: 1 = ERECT 2 = RECURVED  
3 = OTHER (Specify):

2 Flag leaf: 1 = NOT TWISTED 2 = TWISTED

1 Hairs on first leaf sheath: 1 = ABSENT 2 = PRESENT

2 Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

1 5 MM. LEAF WIDTH (First leaf below flag leaf)

2 6 CM. LEAF LENGTH (First leaf below flag leaf)

## 11. HEAD:

☐ 2 Density: 1 = LAX 2 = DENSE ☐ 2 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE  
 4 = OTHER (Specify) \_\_\_\_\_  
☐ 4 Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED  
☐ 1 Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED  
 5 = BROWN 6 = BLACK 7 = OTHER (Specify) \_\_\_\_\_  
☐ 7 ☐ 0 CM. LENGTH ☐ 1 ☐ 2 MM. WIDTH

## 12. GLUMES AT MATURITY:

☐ 3 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.) ☐ 2 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.)  
 3 = WIDE (CA. 4 mm.)  
☐ 6 Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE ☐ 3 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE 4 = CURVED 5 = STRAIGHT 6 = BENT 7 = OTHER (Specify) \_\_\_\_\_

## 13. COLEOPTILE COLOR:

☐ 1 1 = WHITE 2 = RED 3 = PURPLE

## 14. SEEDLING ANTHOCYANIN:

☐ 2 1 = ABSENT 2 = PRESENT

## 15. JUVENILE PLANT GROWTH HABIT:

☐ 3 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

## 16. SEED:

☐ 3 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL ☐ 1 Check: 1 = ROUNDED 2 = ANGULAR  
☐ 1 Brush: 1 = SHORT 2 = midlong 3 = LONG ☐ 1 Brush: 1 = NOT COLLARED 2 = COLLARED  
☐ --- Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK  
☐ 2 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) \_\_\_\_\_  
☐ 7 ☐ 0 MM. LENGTH ☐ 3 ☐ 5 MM. WIDTH ☐ 4 ☐ 1 GM. PER 1000 SEEDS

## 17. SEED CREASE:

☐ 1 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMMI'  
☐ 1 Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMMI'

## 18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3 = Moderately Susceptible 4 = Moderately Resistant

☐ 2 STEM RUST (Races) field races ☐ 4 LEAF RUST (Races) field races ☐ 0 STRIPE RUST (Races) ☐ 0 LOOSE SMUT  
☐ 0 POWDERY MILDEW ☐ 0 BUNT ☐ 0 OTHER (Specify) \_\_\_\_\_

## 19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3 = Moderately Susceptible 4 = Moderately Resistant

☐ 0 SAWFLY ☐ 0 APHID (Byav.) ☐ 0 GREEN BUG ☐ 0 CEREAL LEAF BEETLE  
☐ 0 OTHER (Specify) \_\_\_\_\_ HESSIAN FLY RACES: ☐ 0 GP ☐ 0 A ☐ 0 B ☐ 0 C  
☐ 0 D ☐ 0 E ☐ 0 F ☐ 0 G

## 20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Vic	Seed size	Vic
Leaf size	Vic	Seed shape	Vic
Leaf color	Vic	Coleoptile elongation	Vic
Leaf carriage	Vic	Seedling pigmentation	Vic

## INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.T. Briggie and L.P. Reitz, 1961, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Vernal Purity, Contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. See attachment.

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

## EXHIBIT D

## ADDITIONAL DESCRIPTION OF FJORD

Fjord is a spring durum wheat bred and developed by Nickerson American Plant Breeders Inc. It was tested as experimental number HD81-485.

Fjord is a standard height variety with good straw strength and medium-early maturity. It has very high test weight levels. The quality of Fjord is satisfactory with strong gluten properties.

Juvenile plant growth habit is erect. Plant color at boot is blue green with a recurved flag leaf. Head shape is strap to tapering, dense, awned and head color is white at maturity. Glumes are long and midwide with apiculate shoulders and acuminate beaks. Seed shape is elliptical to ovate with rounded cheeks. Seed crease is narrow and shallow.

Fjord is well adapted to the durum wheat region of North Dakota and surrounding areas. Since it is a standard height variety, it is not recommended for high yield areas such as the Red River Valley.

## EXHIBIT E

## STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

Nickerson American Plant Breeders Inc. is the applicant for protection in this case being:

- a) The incorporated business (registered in Delaware) for and within which regular employees have bred the named variety.
- b) The proprietary owner and intending commercial user of the variety.

## EXHIBIT F.

## QUALITY AND AGRONOMIC DATA

Quality data . . . . .	page 1-2
Agronomic data . . . . .	page 3 Thru 7
Disease Ratings . . . . .	page 8

# NAP'D DURUM QUALITY DATA 1981-1986 AVERAGES

<u>Variety</u>	<u>No. Loc.</u>	<u>T. Wt. Lbs/Bu</u>	<u>Semolina Protein 14% mb</u>	<u>Semolina Color ppm</u>	<u>Mix Rate</u>
Vic	15	60.6	14.0	7.0	7.0
Fjord	15	61.2	13.5	8.7	7.8
Lloyd	5*	60.8	12.2	7.0	6.0
Stockholm	5*	60.9	12.2	6.3	6.6
Vic	5*	60.8	13.3	6.0	7.4
Cando	12	58.6	13.3	7.6	3.5
Stockholm	12	60.0	13.1	8.0	6.6

★ 1984-1986

## 1985 UNIFORM REGIONAL DURUM NURSERY Langdon, Minot, Carrington, Williston, Dickinson, Fargo

<u>Variety</u>	<u>T.Wt.★ Lbs/Bu</u>	<u>Vit Ker %</u>	<u>1000 K.Wt. gm</u>	<u>Wht Pro %</u>	<u>Semo Ext %</u>	<u>Specks★ Spk/ 10 sq"</u>	<u>Spag Color Unit</u>	<u>Mix Rate 1-8</u>	<u>Firm q-cm</u>	<u>Overall Value★★</u>
Ward	59.9	79	39.8	16.1	59.4	73	8.2	3.2	8.1	1.8
Cando	59.9	67	37.0	14.9	58.0	78	8.1	2.8	7.9	1.5
Vic	60.8	71	42.4	15.5	57.6	69	8.6	6.0	8.8	3.8
Lloyd	60.3	68	40.7	14.6	58.5	93	8.3	6.5	8.6	2.3
Monroe	59.5	70	42.6	15.3	57.6	77	8.5	6.7	9.0	3.7
Stockholm	60.5	63	39.7	14.1	57.5	74	8.4	6.0	8.6	2.2
Fjord	60.8	61	40.3	15.2	56.8	73	8.8	6.7	8.2	2.7

★ low score = good

★★ evaluation

1 = no promise

2 = little promise

3 = some promise

4 = good promise

87000092

NAPB DURUM QUALITY DATA  
1981-1986 AVERAGES

<u>Variety</u>	<u>No. Loc.</u>	<u>T. Wt. Lbs/Bu</u>	<u>Semolina Protein 14% mb</u>	<u>Semolina Color ppm</u>	<u>Mix Rate</u>
Vic	15	60.6	14.0	7.0	7.0
Fjord	15	61.2	13.5	8.7	7.8
Lloyd	5*	60.8	12.2	7.0	6.0
Stockholm	5*	60.9	12.2	6.3	6.6
Vic	5*	60.8	13.3	6.0	7.4
Cando	12	58.6	13.3	7.6	3.5
Stockholm	12	60.0	13.1	8.0	6.6

\* 1984-1986

8700092

## OVER YEAR SUMMARY OF REGIONAL DURUM NURSERY - N. DAKOTA LOCATIONS, 1984-86

Variety	Yield - Bu/A			3 Yr. Avg.	% of Vic	(16)	(16)	(16)	(9)
	84(5)	85(5)	86(5)			T.Wt. lb/bu	Head. Days	Ht. cm	Lodg. 1-9
Rugby	43.8	53.1	53.1	50.2	103	59.6	57.9	92.0	2.6
Fjord	43.3	54.5	49.4	49.1	101	60.2	57.2	90.2	2.4
Ward	43.5	51.3	51.7	49.0	101	59.3	57.7	91.3	2.5
Vic	44.8	52.9	48.2	48.6	100	59.3	57.7	91.8	2.4
Stockholm	44.9	56.3	43.7	48.0	99	56.4	58.3	70.4	1.4
Monroe	44.4	49.8	48.8	47.7	98	58.6	55.8	86.8	2.3
Laker	43.6	53.8	44.1	47.0	96	56.8	59.6	77.4	3.6
Lloyd	42.1	54.0	41.6	45.6	94	54.2	59.8	69.3	1.6
Cando*	41.7	50.6	-	45.0	93	55.3	58.8	68.0	1.2

( ) - indicates number of locations

\* - Cando not tested in 1986. Yield and agronomic averages adjusted.

1-9 - Scores based on a scale of 1-9 (1 = best).

# SPRING WHEAT TRIAL SUMMARIES OVER LOCATIONS-OVER YEARS

## VARIETY OR LINE: FJORD VERSUS STOCKHOLM

STATE	YIELD OVER YEARS		
	BU/A	BU/A	NO.
	FJORD	STK	LOC.
MN	60.9	61.5	11
ND	52.3	51.5	28
SD	41.4	42.2	6

STATE	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.
	FJORD	STK	LOC.
MN	60.7	59.2	6
ND	60.4	57.8	23
SD	60.9	59.7	6

REGION	YIELD OVER YEARS		
	BU/A	BU/A	NO.
	FJORD	STK	LOC.
EAST	56.2	52.9	11
R.RIVER	62.7	65.4	20
WEST	42.1	41.6	20

REGION	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.
	FJORD	STK	LOC.
EAST	59.7	55.8	11
R.RIVER	61.4	58.8	9
WEST	61.3	60.3	20

## OVER LOCATION/YEARS

VARIETY	NO. LOC	YIELD	NO. LOC	AVE TW	NO. LOC	AVE HT.	NO. LOC.	AVE HD.
FJORD	51	53.2	40	60.9	41	92.3	36	58.0
STOCKHOLM	51	53.4	40	58.7	41	73.0	36	59.1

NOTE: This summary includes Agripco and Uniform Regional data from 1984-86.

SPRING WHEAT TRIAL SUMMARIES  
OVER LOCATIONS-OVER YEARS

## VARIETY OR LINE: CANDO VERSUS FJORD

STATE	YIELD OVER YEARS			STATE	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.		BU/A	BU/A	NO.
	CANDO	FJORD	LOC.		CANDO	FJORD	LOC.
MN	60.1	61.4	8	MN	60.5	61.7	4
ND	53.2	54.1	19	ND	59.0	60.9	14
SD	39.6	43.5	4	SD	57.9	60.6	4

REGION	YIELD OVER YEARS			REGION	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.		BU/A	BU/A	NO.
	CANDO	FJORD	LOC.		CANDO	FJORD	LOC.
EAST	55.9	59.6	8	EAST	58.1	60.7	8
R.RIVER	67.9	66.5	14	R.RIVER	62.3	63.9	5
WEST	37.3	39.9	12	WEST	58.9	60.8	12

## OVER LOCATION/YEARS

VARIETY	NO. LOC	YIELD	NO. LOC	AVE TW	NO. LOC	AVE HT.	NO. LOC.	AVE HD.
CANDO	34	54.2	25	59.3		27	73.1	25
FJORD	34	55.5	25	61.4		27	93.7	25

NOTE: This summary includes AgriPro and Uniform Regional data from 1984-86.

8700092

# SPRING WHEAT TRIAL SUMMARIES OVER LOCATIONS-OVER YEARS

VARIETY OR LINE: FJORD VERSUS LLOYD

<u>STATE</u>	<u>YIELD OVER YEARS</u>			<u>STATE</u>	<u>TEST WT. OVER YEARS</u>		
	<u>BU/A</u>	<u>BU/A</u>	<u>NO.</u>		<u>BU/A</u>	<u>BU/A</u>	<u>NO.</u>
	<u>FJORD</u>	<u>LLOYD</u>	<u>LOC.</u>		<u>FJORD</u>	<u>LLOYD</u>	<u>LOC.</u>
MN	59.5	61.0	9	MN	60.7	58.1	6
ND	50.8	48.9	25	ND	60.4	56.5	23
SD	41.4	37.2	6	SD	60.9	57.0	6

<u>REGION</u>	<u>YIELD OVER YEARS</u>			<u>REGION</u>	<u>TEST WT. OVER YEARS</u>		
	<u>BU/A</u>	<u>BU/A</u>	<u>NO.</u>		<u>BU/A</u>	<u>BU/A</u>	<u>NO.</u>
	<u>FJORD</u>	<u>LLOYD</u>	<u>LOC.</u>		<u>FJORD</u>	<u>LLOYD</u>	<u>LOC.</u>
EAST	56.2	50.8	11	EAST	59.7	54.2	11
R.RIVER	61.7	63.7	15	R.RIVER	61.4	57.0	9
WEST	42.1	40.2	20	WEST	61.3	58.8	20

## OVER LOCATION/YEARS

<u>VARIETY</u>	<u>NO.</u> <u>LOC</u>	<u>YIELD</u>	<u>NO.</u> <u>LOC</u>	<u>AVE</u> <u>TW</u>	<u>NO.</u> <u>LOC</u>	<u>AVE</u> <u>HT.</u>	<u>NO.</u> <u>LOC.</u>	<u>AVE</u> <u>HD.</u>
FJORD	46	51.8	40	60.9	36	90.6	31	58.6
LLOYD	46	50.4	40	57.2	36	71.4	31	61.3

NOTE: This summary includes AgriPro and Uniform Regional data from 1984-86.

SPRING WHEAT TRIAL SUMMARIES  
OVER LOCATIONS-OVER YEARS

## VARIETY OR LINE: FJORD VERSUS VIC

STATE	YIELD OVER YEARS			STATE	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.		BU/A	BU/A	NO.
	FJORD	VIC	LOC.		FJORD	VIC	LOC.
MN	60.9	61.7	11	MN	60.7	59.9	6
ND	52.3	51.4	28	ND	60.4	59.5	23
SD	41.4	41.2	6	SD	60.9	61.4	6

  

REGION	YIELD OVER YEARS			REGION	TEST WT. OVER YEARS		
	BU/A	BU/A	NO.		BU/A	BU/A	NO.
	FJORD	VIC	LOC.		FJORD	VIC	LOC.
EAST	56.2	56.2	11	EAST	59.7	58.4	11
R.RIVER	62.7	63.6	20	R.RIVER	61.4	60.7	9
WEST	42.1	39.7	20	WEST	61.3	60.8	20

## OVER LOCATION/YEARS

VARIETY	NO. LOC	YIELD	NO. LOC	AVE TW	NO. LOC	AVE HT.	NO. LOC.	AVE HD.
FJORD	51	53.2	40	60.9	41	92.3	36	58.0
VIC	51	52.6	40	60.1	41	94.5	36	58.6

NOTE: This summary includes AgriPro and Uniform Regional data from 1984-86.

## STEM RUST AND LEAF RUST RATINGS FROM ST. PAUL, MINNESOTA (McVEY)

	STEM RUST		LEAF RUST	
	<u>1985</u>	<u>1986</u>	<u>1985</u>	<u>1986</u>
Fjord	0	0	60MS	T-5MS-S
Monroe	0	0	40MS	TR
Rugby	0	0	20MR,60S	TMS
Ward	0	0	60MS	TS
Stockholm	0	0	60MS	TR
Cando	0	-	40S	-
Lloyd	0	0	60S	TMS
Vic	0	0	60S	TMS
Laker	40MS	5MR	60MS	TMR
Mindum	40S	40S	TS	TS